



Fig. 1

300~

Track users' click info for each query

310~

Normalize query format

320~

Sort tracked data by query

330~

For each query, determine user preference score for each image
(see Fig. 4)

Fig. 3

Create User Preference Scores

400~

For each query

410~

For each image

420~

Determine clicks expected based on position when clicked and weight for appropriate user interface(s)

430~

Determine actual clicks

440~

User preference score = actual clicks / clicks expected

450~

end loop

460~

end loop

Fig. 4

Details of User Preference Scores

500~

Time click occurred	Query	User info	Fingerprint/ ID of image	Position in search results
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Fig. 5
One Record in
Click Info

600~

Fig. 6a
Search result
Positions
(Not Query
Specific)

1	2	3
4	5	6
7	8	9
10	11	12
13	14	15

First page

610~

Fig. 6b
Weights
Table (Not
Query
Specific)

.0576	.0446	.0380
.0300	.0293	.0274
.0231	.0234	.0230
.0212	.0217	.0212
.0223	.0230	.0237

First page

620~

Fig. 6c
Weights
Table (Not
Query
Specific)

.0105	.0103	.0098
.0087
...
...
...

Second page

700~

Fig. 7
Example of User
Preference
Scoring

Query	Fingerprint/ ID of image	Position in result	Percentage of clicks expected
roadrunner	A	1	.0576
roadrunner	B	5	.0293
roadrunner	A	1	.0576
roadrunner	A	1	.0576
roadrunner	C	15	.0237
roadrunner	C	15	.0237
roadrunner	A	2	.0446

800~

Fig. 8
Example of User
Preference
Scoring
(continued)

Image	Clicks expected	Actual clicks	Score (actual/ expected)
A	.38045	4	10.51
B	.2051	1	4.88
C	.1659	2	12.06